Dinion^{XF} – LTC 0510 & LTC 0385 series cameras

Security Systems

EN Installation Instructions
15-bit digital monochrome camera

FR Manuel d'installation
Caméra numérique monochrome 15 bits

DE Installationshandbuch
15-Bit digitale Schwarzweißkamera

ES Manual de instalación
Cámara digital monocroma de 15 bits

NL Installatiehandleiding
15-bits digitale monochroomcamera

IT Manuale di installazione
Telecamera digitale monocromatica 15 bit

PT Manual de Instalação
Câmara digital monocromática de 15 bits

ZH 安装说明
15 位数码黑白摄像机

BOSCH

SAFETY PRECAUTIONS

Danger

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product's enclosure that may be of sufficient magnitude to constitute a risk to persons.

Warning

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution

To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

Important Safeguards

1. Read these instructions.
2. Keep these instructions.
3. Comply with all warnings.
4. Follow all instructions.
5. Do not use this equipment near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. Both the wide blade and the third prong are provided for your safety. If the supplied plug does not fit into your outlet, consult an electrician for advice.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the equipment.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this equipment during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way, such as when power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the equipment, the equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. An all-pole mains switch with a contact separation of at least 3mm in each pole shall be incorporated in the electrical installation of the building.

Warning

To reduce the risk of fire or electric shock, this apparatus should not be exposed to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

Note

Any change or modification of the equipment, not expressly approved by Bosch authorization, could void the user's authority to operate the equipment. For additional information or to speak to a representative, please contact the Bosch Security Systems location nearest to you or visit our web site at www.boschsecuritysystems.com

Introduction

The Dinion^{XF} is a high-performance smart surveillance monochrome camera. It incorporates 15-bit digital signal processing for outstanding picture performance under all lighting conditions. The Dinion^{XF} is easy to install and ready to use, and offers the best solution for demanding scene conditions. Features include:

- Three pre-programmed operation modes
- Noise elimination
- Adaptive dynamic range optimization
- Bilinx™ bi-directional coaxial communications
- Genlock
- Enhanced video motion detection

Type number overview

Type number	LTC 0510/10	LTC 0510/20	LTC 0510/50	LTC 0510/60
Standard	CCIR	EIA	CCIR	EIA
Supply voltage	24 VAC or 12 VDC		230 VAC 50Hz	110 VAC 60Hz
CCD type	1/2"			

Type number	LTC 0385/10	LTC 0385/20	LTC 0385/50	LTC 0385/60
Standard	CCIR	EIA	CCIR	EIA
Supply voltage	24 VAC or 12 VDC		230 VAC 50Hz	110 VAC 60Hz
CCD type	1/3"			

Caution

Ensure that your power supply matches the rated voltage of your camera before installing.

Unpacking

Unpack carefully and handle the equipment with care. The packaging contains:

- Dinion^{XF} camera
- CCD protection cap
- Spare lens connector (male)
- These instructions

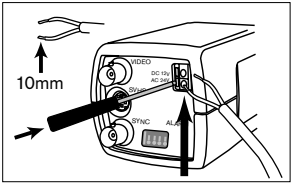
Note

If equipment appears to have been damaged during shipment, repack it in the original packaging and notify the shipping agent or supplier.

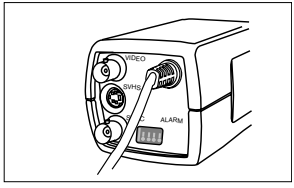
Connections

Power

Low voltage versions



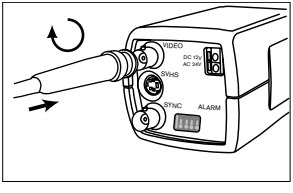
High voltage versions

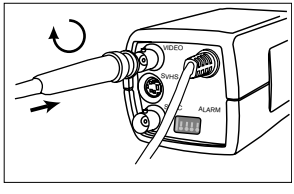


For low voltage cameras:

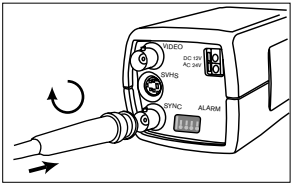
- push in the tabs to open the quick-connectors (these connections are not polarity sensitive).
- use AWG16 to 22 stranded wire or AWG16 to 26 solid wire; cut back 10mm (0.4") of insulation.

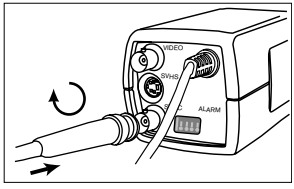
Composite video



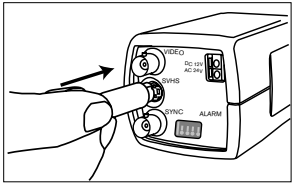


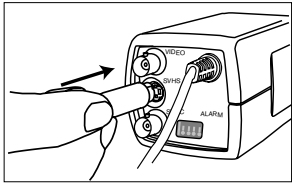
Sync



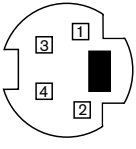


SVHS



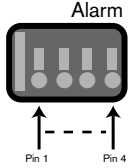


Pin	SVHS socket
1	GND Y
2	NC
3	Y
4	NC



Alarm connector

Pin	Alarm socket
1	Ground
2	Alarm in
3	Relay out contact 1
4	Relay out contact 2



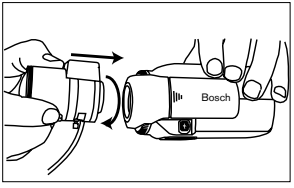
- Max. wire diameter AWG 22-28 for both stranded and solid
- Default relay position n.o. (normally open), no alarm
- Alarm output relay switching capability: Max voltage 30VAC or +40VDC. Max 0.5 A continuous, 10VA.
- Alarm in: TTL logic, +5V nominal, +40VDC max, DC coupled with 22kΩ pull-up to +3.3V
- Alarm in: configurable as active low or active high
- Max. 42V allowed between camera ground and each of the relay pins.

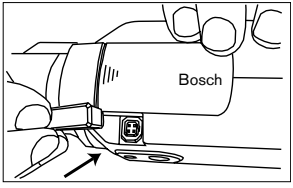
Lens mounting

The camera accepts both C and CS-mount lenses. DC-iris lenses are recommended for the best picture performance. The camera automatically detects the type of lens used and optimizes performance accordingly. A spare male lens connector is provided.

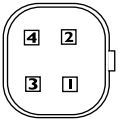
Caution

To avoid damaging the CCD sensor when using a C-mount lens, turn the red back focus ring counterclockwise until it stops (see back focus adjustment) before mounting the lens.
Lenses weighing more than 0.5 kg (1.1lbs) must be separately supported.





Pin	Video iris lens	DC iris lens
1	Supply (11.5V ±0.5, 50mA max.)	Damp -
2	Not used	Damp +
3	Video signal 1Vpp 1kOhm	Drive +
4	Ground	Drive -



Note

If a short circuit is detected on the lens connector, the on-screen display (OSD) failure message LENS SHORT CIRCUIT is shown. The lens circuit is automatically disabled to avoid internal damage. Remove the lens connector and check the pin connections.

Back focus adjustment

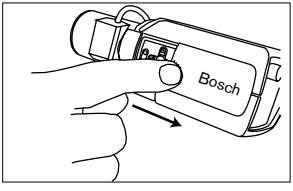
To optimize picture sharpness in both bright and low-level lighting, adjust the back focus. Use the camera's unique **Lens Wizard** (see **Advanced Set-up**). This ensures that the object of interest always remains in focus even when focusing at the maximum lens opening.

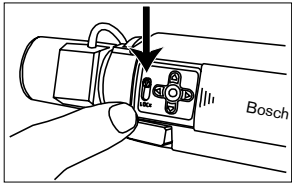
When back focusing vari-focus lenses, adjust to obtain a sharp picture in both wide-angle and tele positions for both far and near focus.

When back focusing zoom lenses, ensure the object of interest remains in focus throughout the entire zoom range of the lens.

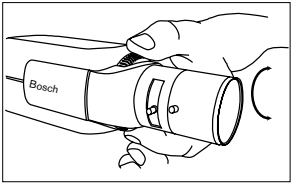
To adjust back focus:

1. Open the slide door at the side of the camera
2. Unlock the back focus locking button.





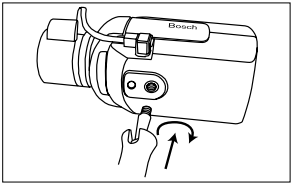
3. Turn the back focus adjustment as required.



4. Lock the back focus locking button.

Mounting the camera

The camera can be mounted from the top or bottom. The bottom mounting is isolated from ground. With outdoor scenes, a DC-iris lens is recommended.



Caution

Do not point the camera/lens into direct sunlight.

Advanced Set-up

The Dinion^{XF} normally provides an optimal picture without the need for further adjustments. However, advanced set-up options are available for getting the best results from the camera under special circumstances. There are two main menus; a **Mode** menu and an **Installer** menu.

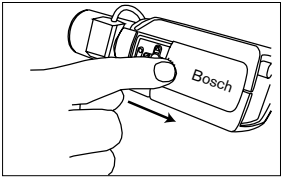
The camera has three pre-programmed operating modes that can be selected in the **Mode** menu. These modes are pre-programmed by default but you can adjust them according to your preferences. The **Mode** menu allows you to select and set-up the picture enhancement functions for each mode. If you are not happy with your changes, you can always recall the default values for the mode.

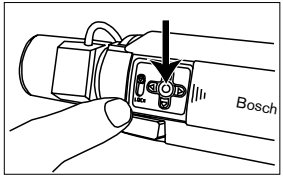
The camera also has an **Installer** menu in which the installation settings can be set.

The **Mode** and **Installer** menus have functions that can be selected directly or submenus for more detailed set-up.

Accessing and navigating menus

Five keys, located behind the side panel, are used for navigating through the various menus.
To access the set-up menus, press the menu/select key (center).

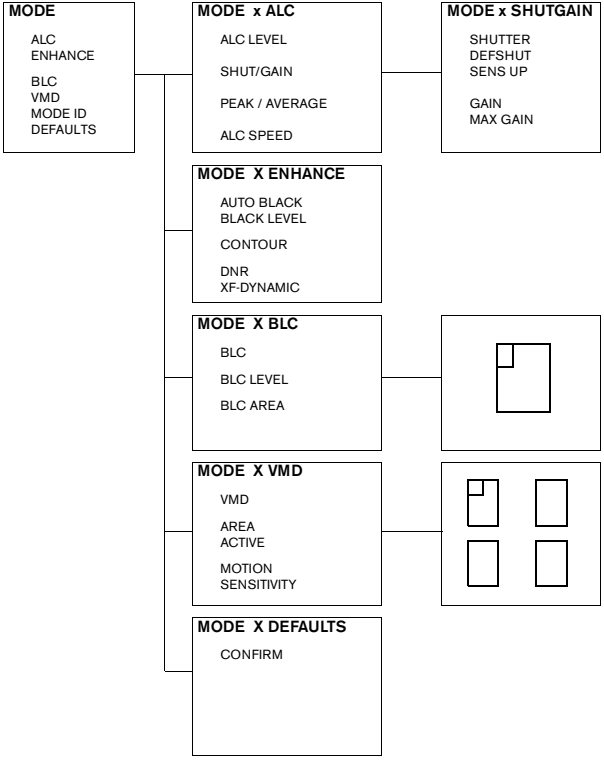


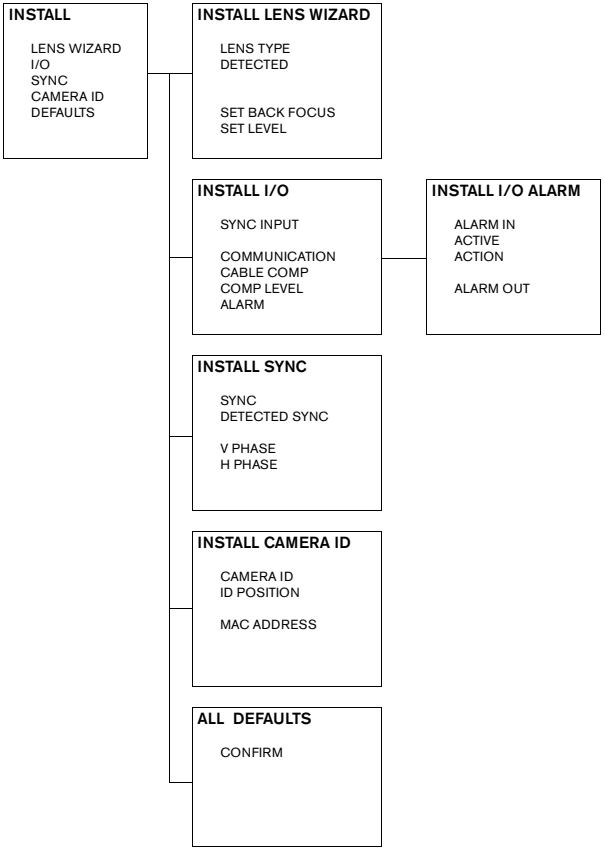


The main menu appears on the OSD. Use the arrow keys for navigation.

When the Bilinx™ communications link is active, the buttons on the camera are disabled. You can also set up Bilinx™ so that the camera buttons remain disabled even when Bilinx™ is not actively controlling the camera. This prevents unauthorized change of the camera settings.

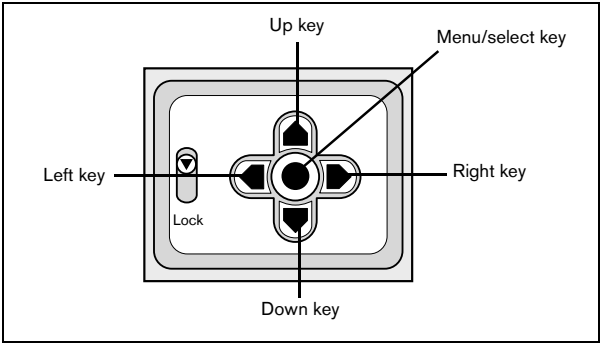
Menu Structure




INSTALL
LENS WIZARD
I/O
SYNC
CAMERA ID
DEFAULTS
INSTALL LENS WIZARD
LENS TYPE
DETECTED
SET BACK FOCUS
SET LEVEL
INSTALL I/O
SYNC INPUT
COMMUNICATION
CABLE COMP
COMP LEVEL
ALARM
INSTALL I/O ALARM
ALARM IN
ACTIVE
ACTION
ALARM OUT
INSTALL SYNC
SYNC
DETECTED SYNC
V PHASE
H PHASE
INSTALL CAMERA ID
CAMERA ID
ID POSITION
MAC ADDRESS
ALL DEFAULTS
CONFIRM

Hints for menu navigation

How to use the 5 keys



- Press the menu/select key to access the menus or to move to the next or previous menu.
- Press the menu/select key for approximately 1.5 seconds to open the **Installer** menu.

- Use the up or down keys to scroll up or down through a menu.
- Use the left or right keys to move through options or to set parameters.

- When in a menu, quickly pressing the menu/select key twice restores the selected item to its factory default.
- To close all menus at once from any menu, select the **Exit** item and hold down the menu/select key until the menu display disappears.

Mode menu

Function	Selection	Description
MODE	1, 2, 3	Select operating mode
ALC	Select submenu	Select to access the video level control menu
ENHANCE	Select submenu	Select to access the picture enhancement menu
BLC	ON, OFF, Select submenu	• To enable Back Light Compensation (BLC) operation set to ON • Select to access the BLC menu
VMD	OFF, SIL, OSD Select submenu	• To enable Video Motion Detection (VMD) operation set to SIL (silent) or OSD (monitor alarm generates on-screen message) • Select to access the VMD menu
MODE ID	10 character string	Editable name for the selected mode
DEFAULTS	Select submenu	Return all settings for the selected mode to factory defaults
EXIT		Exit the menu

ALC submenu

Function	Selection	Description
ALC LEVEL	-15 - 0 - +15	Adjusts the video output level
SHUTGAIN	Select submenu	Select to access the Shutter and Gain control menu
PEAK AVERAGE	-15 - 0 - +15	Adjust the balance between peak and average video control
ALC SPEED	Slow, Medium, Fast	Adjust the speed of the video level control loop.
EXIT		Return to MODE menu

ALC --> Shutter/Gain submenu

Function	Selection	Description
SHUTTER	AES, FL, FIXED	• AES - auto-shutter - the camera automatically sets the optimum shutter speed for manual iris lenses • FL - flickerless mode avoids interference from light sources (recommended for use with video iris or DC iris lenses only) • FIXED - allows a user defined shutter speed
DEFSHUT	1/60 (1/50), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/10K	Only available if SHUTTER is AES. The camera tries to maintain the selected shutter speed as long as the light level of the scene permits.
FIX SHUT	1/60 (1/50), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/10K	Only available if SHUTTER is FIXED. Selects shutter speed.
SENSUP	OFF, 2x, 3x, …,10x	Selects the factor by which the sensitivity of the camera is increased.
GAIN	AGC, FIXED	• In AGC mode the camera automatically sets the gain to the lowest possible value needed to maintain a good picture • In FIXED mode the gain is set at a predefined not scene dependent value
MAXGAIN	0, 1, ... 28	Available in AGC mode only. Selects the maximum value the gain can have during AGC operation.
FIXGAIN	0, 1, ... 28	Available in FIXED gain operation only. Selects the gain setting.
EXIT		Return to the ALC menu

Note

If SENS UP is active, some noise or spots may appear in the picture. This is normal camera behavior. SENS UP may cause some motion blur on moving objects.

Enhance submenu

Function	Selection	Description
AUTO BLACK	ON, OFF	Autoblack ON automatically increases the visibility of details
BLK LEVEL	-50, ... 0, ...+50	Adjusts the black level between 0 and approx 110mV. Zero position of slider corresponds to the factory default black level
CONTOUR	-15 - 0 - +15	Adjusts the sharpness of the picture. 0 corresponds to the default position.
DNR	AUTO, OFF	In AUTO mode the camera automatically reduces the noise in picture. This may cause some motion blur on moving objects.
XF-DYN	OFF, LOW, MID, HIGH	In XF-DYN mode the camera automatically optimizes the contrast in the picture.
EXIT		Return to MODE menu

Back Light Compensation (BLC) submenu

Function	Selection	Description
BLC	ON, OFF	When ON, the video level is optimized for the selected area of the image. Parts outside this area may be underexposed or overexposed (this is normal).
BLC LVL	-15,..0,..+15	BLC LEVEL adjust the balance between the selected BLC area and its surrounding.
AREA	Select submenu	Select to access the Back Light Compensation area menu (see selecting an area).
EXIT		Return to MODE menu

Selecting an area

To set-up an area for BLC (or VMD), access the area menu by selecting the AREA option from the BLC (or VMD) menu. Upon entering the AREA menu, the current area is displayed with the upper left corner flashing. The flashing corner of the image can be moved with the Up, Down, Left, Right arrow keys. Pressing the Select key moves the flashing cursor to the opposite corner, which can now be moved. Pressing Select again freezes the area and exits the area menu.

Video Motion Detection (VMD) submenu

Function	Selection	Description
VMD	OFF, SIL, OSD	When VMD is enabled and the camera can generate SIL (silent) or OSD (monitor alarm generates on-screen message) motion alarms.
AREA	1, 2, 3, 4, Select submenu	• It is possible to set 4 motion sensitive areas (per MODE). • Press SELECT to enter the area set-up menu.
ACTIVE	ON, OFF	Every area can be enabled individually by selecting YES.
MOTION	Press SELECT to reset indicator	Indicates the peak of measured motion in the selected area
SENS		Use the LEFT/RIGHT keys to set the SENSitivity for motion to the desired level. Motion above this level triggers alarm.
EXIT		Return to MODE menu

Note
If VMD areas overlap, motion is only detected in the area with the lowest sequence number.

Defaults submenu

Function	Selection	Description
MODE DEFAULTS		Select to restore the factory defaults. A confirmation screen appears. Allow 5 seconds for the camera to optimize the picture after a mode reset.
EXIT		Return to MODE menu

Installer Settings

Install menu

Function	Selection	Description
LENS WIZARD	Select submenu	Select to optimize camera lens combination
I/O	Select submenu	Select to access the I/O functions
SYNC	Select submenu	Select to access the synchronization functions
CAMERA ID	Select submenu	Select to access ID menu
DEFAULTS	Select submenu	Return all settings for all modes to factory defaults
EXIT		Exit the menu

Install lens wizard submenu

Function	Selection	Description
LENS TYPE	AUTO, MANUAL, DCIRIS, VIDEO	In AUTO mode the camera auto detects the type of lens used or force the camera into a mode.
DETECTED		If the LENS TYPE detection is in AUTO, the detected lens type will be shown.
SET BACK FOCUS NOW		Select to force lens to its maximum opening. After focusing the lens the object of interest remains in focus in bright and low light conditions.
SET LVL		(Video iris lenses only). The level detector indicator must be set to the center by adjusting the level potentiometer on the lens, to obtain the best picture performance.
EXIT		Return to the INSTALL menu

Adjustment procedure DC-iris Lens:

1. Unlock the back focus locking button.
2. Access the Lens Wizard menu.
3. SET BACK FOCUS NOW is highlighted in the menu.
4. Turn the back focus adjustment as required.
5. Lock the back focus locking button.
6. Exit the menu.

Adjustment procedure Manual-iris Lens:

1. Unlock the back focus locking button.
2. Adjust the lens to the maximum lens opening.
3. Turn the back focus adjustment as required.
4. Lock the back focus locking button.

Adjustment procedure Video-iris Lens:

1. Unlock the back focus locking button.
2. Access the Lens Wizard menu.
3. SET BACK FOCUS NOW is highlighted in the menu.
4. Turn the back focus adjustment as required.
5. Lock the back focus locking button.
6. Select SET LVL in the menu; the LEVEL bar appears.
7. Point the camera at the scene it will be mostly viewing.
8. Adjust the level potentiometer located on the lens until the LEVEL bar is in the central position.
9. Exit the menu.

Note

The best performance with video iris lenses is obtained when the peak/average potentiometer of the lens is set to either full average or full peak matching the position of the peak/average balance in the MODE x ALC menu.

Install I/O submenu

Function	Selection	Description
SYNC IN	75 Ohm, HIGH	Select 75 Ohm if the external sync input is not terminated elsewhere.
COMM	ON, OFF	If OFF, Bilinx communication is disabled.
CABLE COMP	OFF, DEFAULT, RG59, COAX12, COAX6	Cable compensation is used to avoid the need for amplifiers in long distance coax connections up to 1000m (3000ft). For optimum results select the coaxial cable type used or if unknown, DEFAULT.
COMP LEVEL	0, 1, .. +15	Sets the level of cable compensation.
ALARM	Select submenu	
EXIT		Return to the INSTALL menu

Install I/O --> Alarm submenu

Function	Selection	Description
ACTIVE	NONE, HIGH, LOW	Selects active_HIGH or active_LOW for the alarm input connector. Select NONE to disable alarm switching.
ACTION	NONE, MODE1, MODE2, MODE3	Selects the operating mode of the camera upon switching the alarm input.
ALARM OUT	VMD, REMOTE	Select VMD to close the output relay upon VMD alarms. Select REMOTE to make the output relay available to remote communication devices.
EXIT		Return to the I/O menu

Install sync submenu

Function	Selection	Description
SYNC	INTERNAL, LINE LOCK, GENLOCK	Select INTERNAL for free running camera operation, select LINE LOCK to lock to the power supply frequency, select GENLOCK to lock to the signal supplied to the external sync input.
DETECTED SYNC		Shows the actual sync mode used by the camera.
VPHASE	0, 2, … 358	Adjusts the vertical phase offset (when in LINE LOCK mode and a valid power supply frequency is detected).
HPHASE	-25, …, 0, … +125	Adjust the horizontal phase offset (when in EXT lock mode and a valid input signal is detected)
EXIT		Return to the INSTALL menu

Note
VPHASE and HPHASE cannot be accessed if there is no valid locking signal.

Install ID submenu

Function	Selection	Description
CAMERA ID		Enter a 16 character camera name string. Use LEFT/RIGHT to change position in the string, use UP/DOWN to select the character. Use SELECT to exit the string edit screen.
ID POS	OFF, TOP, BOT	Select TOP to display the camera ID in the upper left corner; select BOT for the lower left corner. The ID string is not displayed when the OSD menus are open.
EXIT		Return to the INSTALL menu

Defaults submenu

Function	Selection	Description
ALL DEFAULTS		Select to restore the factory defaults. A confirmation screen appears. Allow 5 seconds for the camera to optimize the picture after a mode reset.
EXIT		Return to MODE menu

Camera Control Communication

This camera is equipped with a coaxial communications transceiver. In combination with VP-CFGSFT, the camera can be adjusted from the head-end side of the coaxial cable. All menus can be accessed remotely giving full control of the camera. With this communication it is also possible to disable the local keys on the camera.

To avoid loss of communication on an installed camera, the COMMUNICATION ON/OFF selection is NOT available while using remote control. This function can only be accessed with the camera buttons.

Technical specification

1/2" CCD versions

Type number	LTC 0510/10	LTC 0510/20	LTC 0510/50	LTC 0510/60
Standard	CCIR	EIA	CCIR	EIA
Active pixels	752x582	768x492	752x582	768x492
Rated supply voltage	24 VAC or 12 VDC 12-28 VAC (50/60 Hz) 12-36 VDC		230 VAC 50Hz, (/50) 110 VAC 60Hz, (/60) Range: 100-230 VAC ±10% 50/60Hz	
Min illumination	0.021 lx			

1/3" CCD versions

Type number	LTC 0385/10	LTC 0385/20	LTC 0385/50	LTC 0385/60
Standard	CCIR	EIA	CCIR	EIA
Active pixels	752x582	768x492	752x582	768x492
Rated supply voltage	24 VAC or 12 VDC 12-28 VAC (50/60 Hz) 12-36 VDC		230 VAC 50Hz, (/50) 110 VAC 60Hz, (/60) Range: 100-230 VAC ±10% 50/60Hz	
Min illumination	0.031 lx			

All versions

Imager	Interline CCD
Resolution	570 TVL
SNR	> 50 dB
Video output	1 Vpp, 75 Ohm
SVHS output	Y: 1 Vpp
Synchronization	Internal or Genlock or line-lock selectable
Shutter	AES (1/60 (1/50) to 1/100000), Flickerless, Fixed selectable
Sens Up	Adjustable from OFF to 10x
Auto black	On, Off selectable

All versions

AGC	AGC on or off (0 dB) selectable Maximum level upto 28 dB selectable
XF-DYN	Automatic dynamic range enhancement level selectable
DNR	Automatic noise filtering ON/OFF selectable
Contour	Sharpness enhancement level selectable
BLC	BLC On or Off selectable, with programmable area
Lens Mount	C and CS compatible
ALC lens	Video or DC iris auto detect
Power consumption	< 5 W
Dimensions	58 x 66 x 122 mm (HxWxL) without lens
Weight	450g without lens
Tripod Mount	Bottom (isolated) and Top ¼" 20 UNC
Operating temperature	-20° to 50° C
Controls	OSD with softkey operation

Accessories

Power transformers

- TC1334 120VAC, 60Hz - 24VAC, 30VA
- TC120PS 120VAC, 60Hz - 15VDC, 9VA
- TC220PSX-24 220-240VAC, 50/60Hz - 24VAC, 30VA
- TC220PS 220-240VAC, 50/60Hz - 15VDC, 9VA

Interface box:

- VP-CFGSFT Bilinx™ communication interface box and software

Recommended lenses

Varifocal lenses:

- LTC 3264/30 1/2" DC-iris, 4.5-10mm F1.6-360
- LTC 3274/40 1/2" DC-iris, 7.5-75mm F2.2-360
- LTC 3364/21 1/3" DC-iris, 2.8-6mm F1.4-300 - IR
- LTC 3364/31 1/3" DC-iris, 3.5-8mm F1.4-300 - IR
- LTC 3364/40 1/3" DC-iris, 2.8-12mm F1.4-360
- LTC 3374/20 1/3" DC-iris, 5-50mm F1.4-185

Zoom lenses:

- LTC 3283/20 1/2" Video iris, 8-48mm F1.4-360
- LTC 3384/21 1/3" DC-iris, 6-60mm F1.4-360

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